ESSENCE OF INNOVATION

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Abstract: *This article highlights the multiple interpretations of innovation; the overall objective of the study was to develop a theoretical model based on the earlier work of numerous writers by outlining various definitions, categories, and models of innovation. The literature has shown how crucial innovation is in contributing to form judgments about the business sector and can help the country's economy and job market grow quickly, as well as provide pure profit for innovative commercial organizations. Innovation is one of the key components of economic growth, manufacturing, the development of a wide range of products, and decision-making in management that are directly influenced by the type of innovation applied. The strategy was developed using theoretical frameworks for defining innovation.*

Keywords: *Innovation, concepts of innovation, innovation classification, innovation typology*

INTRODUCTION

Knowledge and innovation are becoming increasingly important to economic development and technical competitiveness across all domains, and scientists, managers, and entire nations are very concerned about this. Universities, the corporate world, and the government sector are all crucial to the growth of innovation. These days, innovation is essential to managing global competition, and businesses must cope with the development of new goods and services (Farniha, L., Ferreira, J. & Gouveia, B. , 2016). The application of ideas that have combined to produce fresh approaches to issues or enhancements to already-existing systems, procedures, goods, or solutions has helped society progress. Humanity's history includes coming up with ideas, putting them into practice, creating new methods, and refining old ones (Godin, 2008). Concepts and views have both affected and been influenced by change, expressing the societal knowledge of the world via language (Skinner, 2015). In the twentieth century, the definition of innovation has come to reconcile the opposing concepts of invention and imitation, which have their roots in ancient Greek philosophy and have developed over time. A major issue in Plato's writings was the imitation of reality, and the question of whether art copies, imitates, or is its own interpretation of reality has been up for dispute for ages (Bannet, 2007). The term "innovation" has many diverse connotations in the twenty-first century, impacted by many influences over the centuries. Some of these definitions are reviewed in the following sections. It is appropriate to refer to the years between the 1960s and the 1990s as the "golden age" of innovative research.

This paper is structured as follows. The first section studies the various facets and ideas of innovation. The second section examines various interrelationships of innovation category. Finally, the third section highlights typologies of innovation.

METHODOLOGY

Theoretical investigation of literature sources pertaining to innovation and innovation classification forms the basis of the research technique. Numerous writers investigated the meanings of innovation and produced definitional and classificational models of the concept. In order to evaluate innovation, several academic works have been reviewed.

LITERATURE REVIEW

Many definitions of innovation are employed in a variety of contexts, including government, business, academia, and service delivery. The body of scholarly literature that is now accessible spans several subjects and disciplines (Fagerberg, J., Mowery, D.C. and Nelson, R.R., 2005). The term "Innovation" comes from the Latin word "Innovare", which meaning "into new". Putting anything new into practice is the most basic definition of innovation. The phrase "innovation" is frequently used in the business sector, and for firms, it typically refers to anything that is expensive, time-consuming, and risky (Costello, T. & Prohaska, B., 2013). Many writers as (Rowe and Boise 1974), (Dewar & Dutton 1986), (Rogers, 1995), (Utterback 1994), (Afuah 1998), (Fischer, 2001), (Garcia& Calantone, 2002), (McDermott & O'Connor, 2002), (Pedersen & Dalum, 2004), (Frascati Manual, 2004) have developed theoretical models of innovation by combining viewpoints from the markets and technology (Timur KOGABAYEV, Antanas MAZILIAUSKAS, 2017). According to some authors, innovation is the creation of a new idea and its application into a new good, service, or process. This results in the creation of pure profit for the innovative business enterprise as well as the rapid expansion of the national economy and job market (Urabe, 1988). As the father of the idea of innovation in the economy, Schumpeter saw innovation as the application of novel combinations of already-existing productive forces to address business challenges. Innovation was defined as the economic impact of technical development (Schumpeter, 1982). A summary of numerous definitions from the literature, along with their essential components, is given below in *Table 1* to kick off the analysis of the literature on innovation.

Table 1. A collection of diverse definitions of innovation

№	Definition	Justification	Reference
1	Creation of new combinations of existing resources	Schumpeter recognized the importance of innovation in the 1930s	(Schumpeter J. , 1934)

2	To make something new	Oxford English Dictionary	Oxfordlearners dictionary.com
3	Innovation is a process that turns new ideas into opportunities and puts these into widely used practices.	Joe Tidd (University of Sussex)	Tidd et al, 1997
4	Innovation is the successful exploitation of new ideas	(UK DTI Innovation Unit, 1994)	The national archives, DTI's Innovation
5	Implementation of a new or significantly improved product (good/service) or process	International guidelines for proposed definition	(OECD/Eurostat, The Oslo Manual. OECD, 2005)
6	Innovation is the successful implementation of creative ideas within an organization	Professor Teresa Amabile	(drkenhudson.com, 2014)
7	The successful exploitation of new ideas or ones that are adopted from other sectors or organizations	The UK government's definition of innovation	National Audit Office (NAO, 2009)
8	Creation and application of good ideas	Australian National Audit Office (ANAO) definition	Australian National Audit Office (ANAO, 2009)
9	The successful introduction of new services, products, processes, business models and ways of working	The Economic and Social Research Council (ESRC)	(ESRC, 2008)
10	The development (generation) and/or use (adaption) of new ideas or behaviors	This definition includes behaviors as well as ideas	(Damanpour, F. and Schneider, M., 2009)
11	The introduction of new elements into a service—new knowledge,	This definition focuses on the new within a service	(De Vires, H.A., Bekkers, V.J.J.M. and Tummers, L.G., 2014)

	new organization, new management/skills		
12	Innovations are in a significant way new and disruptive towards the routines and structures prevailing	This definition views innovation as affecting the external environment	(Evers, A., Ewert, B. and Brandsen, T., Eds., 2014)
13	A continuous and dynamic process in which ideas are transformed into value	This definition includes value as a part of innovation	Confederation of British Industry (CBI)/QUINETIQ (2008)

Source: Innovations for Europe (Innovationss4.eu, 2023).

These definitions aid in the construction of the concept utilized in this research study, the breadth of the literature evaluation, and our knowledge of innovation.

Table 1 shows different definitions of innovation and identifies some core components that make up innovation. It also shows some convergence of ideas and thinking regarding innovation (Seaden, G. and Manseau, A. , 2001).

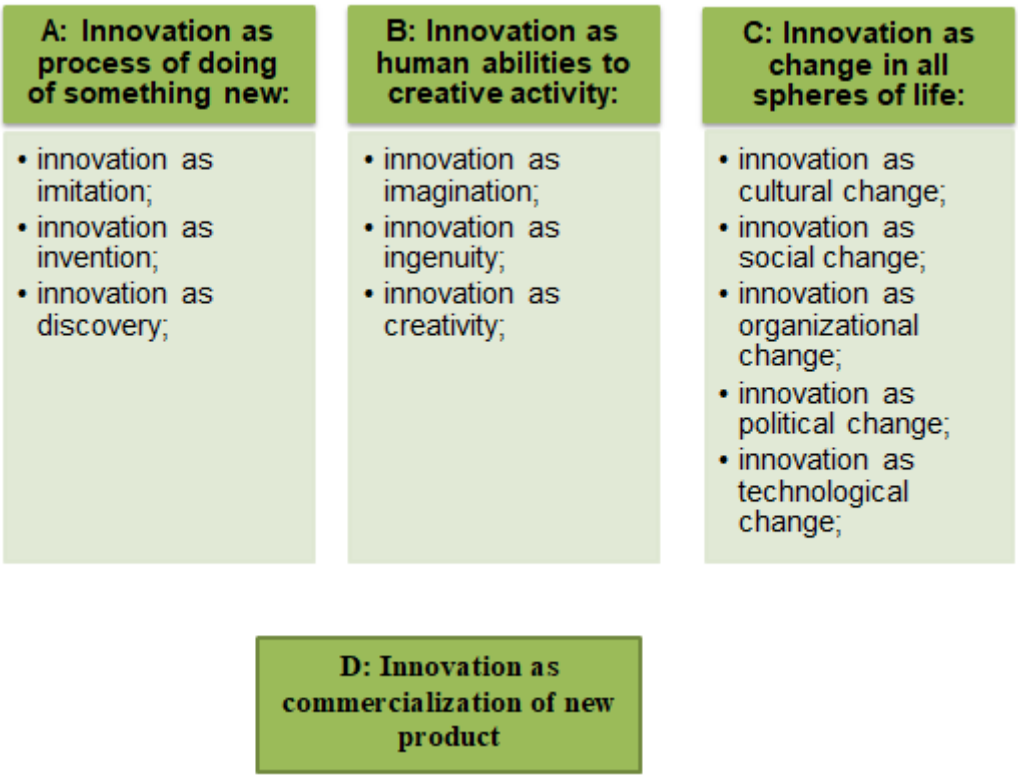
The Organization for Economic Cooperation and Development (OECD) provides fundamental definitions and categories of innovation in a number of publications. These are frequently referred to as "shapes". Innovation is defined as "the implementation of a new or significantly improved product (good or service), or process, a new marketing strategy, or a new organizational method in business practices, workplace organization, or external relations" in the Oslo Manual, the most recent revision of these manuals (OECD Oslo Manuals. Guidelines for Collecting and Interpreting Innovation Data,, 2005). Innovation has been defined as "... all those scientific, technical, commercial, and financial steps necessary for the successful development and marketing of new or improved manufactured products, the commercial use of new or improved processes or equipment, or the introduction of a new approach to a Social service" by the OECD in an earlier definition. Among these processes is simply R&D (OECD, 1981). It is clear from these two instances that the concept of "innovation" has evolved. Innovation typologies and implementation became the primary focus, whereas in the 1980s the emphasis was on innovation phases. Methodological shifts to separate innovation from other changes have been apparent in more recent times. In general, two primary (conceptual) characteristics of innovation tend to be identified (Cooper, 1998):

- innovation as a process that promotes change as a consequence of its focus;
- Innovation that is defined as a novel occurrence, thing, or distinct product.

This categorization may be further divided, though, because it is somewhat general. Three categories may be used to categorize "innovation as event, object, or discrete product": "innovation as event," "innovation as physical object," and "innovation as

something new (new process or method for organizing something)." A more thorough taxonomy of the many facets of invention emerged with time. Godin (2008), for instance, outlines 12 ideas of innovation which are as follows:

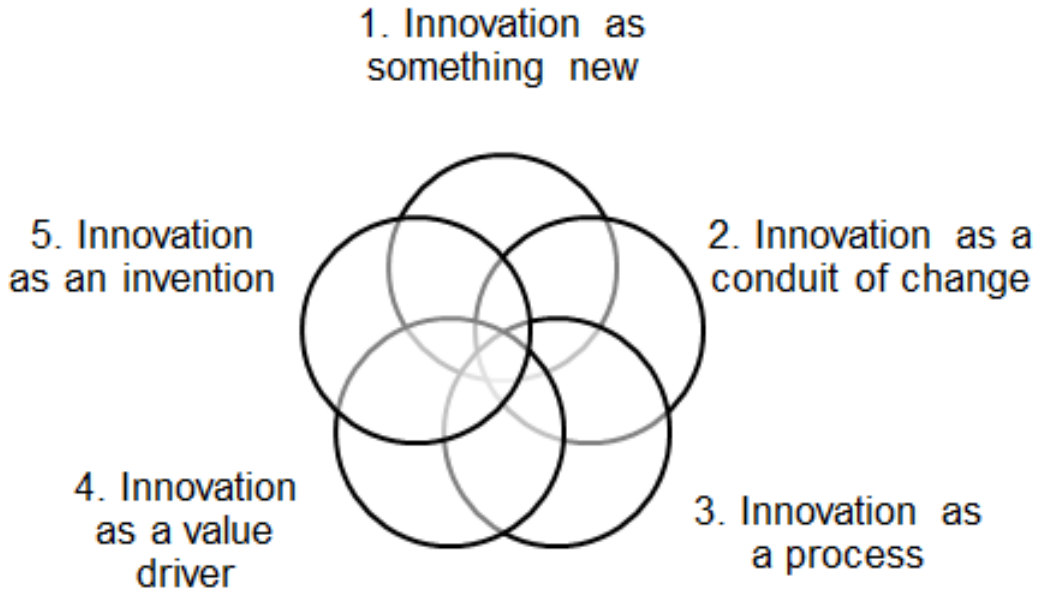
Figure 1. Categories of innovation by Godin



Source: Godin, 2008

Ram, Cui, and Wu (2010) provide another thorough classification of the facets and dimensions of innovation. The following five categories of innovation are distinguished by the authors:

Figure 2. Categories of innovation by Ram, Cui, and Wu



Source: Ram, Cui, and Wu, 2010

Source: Ram, Cui, and Wu, 2010

Innovation is defined by (Afuah, 1998) as the incorporation of new knowledge into processes, goods, and services. As seen in *Table 2* below, he categorizes innovations based on technological, market, administrative/organizational factors (Afuah, 1998).

Table 2. Generic classification of innovation

Generic classification of innovation		
Technological Product Process Service	Market Product Price Place Promotion	Administrative Strategy Structure Systems People

Source: Afuah, 1998

CLASSIFICATION OF INNOVATION

Various forms of innovation were produced in accordance with the notions of innovation evolving. The historical evolution of the innovation categorization has seen a significant shift from "classical" product and process innovation to novel forms like "blue ocean innovation" and "frugal innovation". The major focus of the following will be on classification schemes for different sorts of innovation. One can distinguish between many categories of innovation classification:

Table 3. Typology of innovation in the OECD methodology

Type of Innovation	**Field of Application**	**Distinctive Characteristics**

Product innovation	Innovations related to goods and services.	Significant improvements in the technical specifications, components and materials in the embedded software in the degree of friendliness to the user or other functional characteristics.
Process innovation	Implementation of new or significantly improved methods of production or delivery of the product.	Significant changes in technology, production equipment and / or software.
Marketing innovation	Implementation of new methods of marketing, including significant changes in design or packaging of the product during its storage, market promotion and market-based prices.	Increasing in the degree of consumer satisfaction, creating new markets or new, more favorable market position for production companies to increase sales.
Organizational innovation	Implementation of new forms and methods of organization of business companies, the organization of jobs and external relations.	Implementation of business practices in the organization of workplaces or in the external relations previously used for organizational method that represents the result of the implementation of strategic decisions.

Source: OECD Oslo Manual, 3rd edition (2005)

Table 4. Multitype classification

Type of innovation	**Degree of technological newness**	**Definition of innovation**
No market change		
Reformulation	Improved technology	Maintaining an optimum balance of cost, quality, and availability in the formulas of present company products.
Replacement	New technology	Seeking new and better ingredients or formulation for present company

		products in technology not now employed by the company.
Strengthened market		
Remerchandising	No technology change	Increasing sales to consumers of types now served by the company.
Improved product	New technology	Broadening the line of products offered to present consumers through new technology.
Product line extension	No technology change	Broadening the line of products offered to present consumers through new technology.
New market		
New use	No technology change	Finding new classes of consumers that can utilize present company products.
Market extension	Improved technology	Reaching new classes of consumers by modifying present products.
Diversification	New technology	Adding to the classes of consumers served by developing new technical knowledge.

Source: Jones and Johnson, 1957

Table 5. Classification of innovation

Classification	Innovation type	Essence of innovation

Effectiveness	Radical / breakthrough / discontinuous / disruptive / revolutionary	Extinction of existing markets, radically new products or services
	Transformational / architectural /manufacturing	Use of new technology implying a principal abandonment of conventional production systems and creation of new relations, customers, and markets
	Sustaining or performance-innovation / improving	Replacement of old products with more advanced versions Insignificant changes in the existing range of products, technology,
Type of changes	Incremental / regular / modification	and systems of management in order to improve them Creation or reevaluation of business model
	Pseudo-innovations	Cooperation to use ideas proposed by other corporations, including technology, channels, brands, processes, and proposals
	Business model innovation / paradigm innovation	Tactics towards involving users into the creation of innovation
	Networking innovation	Application of new technology (technological innovation) Quality improvement and reduction in product cost
	Enabling process innovation	Creation of additional products and services to attract customers
	Core process innovation	New or essentially improved services, new offerings on warranty service and delivery
	Product performance innovation	Introduction of systems that allow customers to buy goods and services in the most convenient way, at minimum costs
	Product system innovation	
	Service innovation	
New types of innovation	Channel innovation	

	Brand innovation	Creation of identifiable and unique brands
	Customer experience innovation	Use of customer feedback
	Structure innovation	Optimal utilization of human resource capacity, expertise, and talents
	Profit model innovation	Identification of real needs of target market and search of capacity to utilize new opportunities for gaining profit
	Eco-innovation	Obtainment of products and processes that facilitate sustainable development
	Frugal innovation	Development of low-cost strategy aiming at cost prevention
	Blue ocean innovation	Created by expansion or reshaping of the existing boundaries of the industry
	Red ocean innovation	Development of corporation in competitive environment due to the lack of significant differences in its product from the products of its competitors
	Open innovation / crowdsourcing	Corporation gives access to its intellectual pool to others
	Experience innovation	Involvement of customers for gaining experience
	Niche market innovation	Proved and completed technology is improved and modified in such a way as to be able to maintain a new marketing boost
	Organic innovations	Associated with more efficient use of corporation's own resources

Source: Mensh, G. (1979), Tucker, R.B. (2006), Keeley, L., Pikkel, R., Quinn, B., Walters, H. (2013), Muriithi, S. (2015)

There are a wide range of innovations in the world today, but none have been categorized as of yet. The bulk of the many sorts of innovations may be summarized using the innovation classification that is suggested above.

Typology of innovation ~~(concept)~~

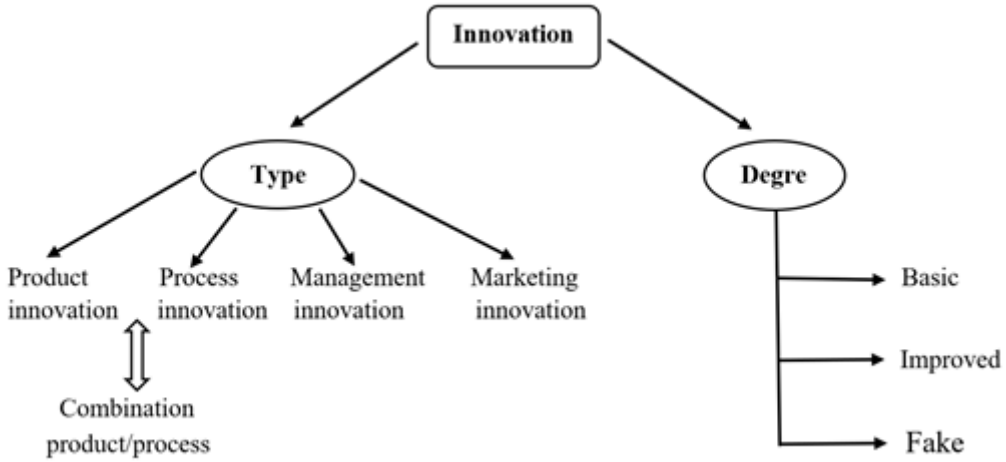
In the conventional Schumpeterian perspective technical change is described as "a historic and irreversible change in the method of production of things" and "creative destruction" (Schumpeter J. , 1934). This definition states that technical changes in practice can be made in the ways represented on *Figure 3* below.

Figure 3. Forms of innovation

Source: Schumpeter, 1934

According to the Schumpeterian idea, innovation is associated with changes that significantly influence the structural changes in certain sectors and market segments, whether they are small-scale (incremental) or large-scale (radical). According to this concept, novel manufacturing techniques don't always stem from fresh scientific findings. Novel approaches can also be credited with the initial use of technology that have already been employed in other sectors. Since innovation is linked to the processes involved in producing a product and using it, the definitions of this term found in worldwide literature are based on a variety of concepts, and each cluster of definitions has unique qualities of its own (Linton, 2002). The Organization for Economic Cooperation and Development (OECD) provides fundamental definitions and types of innovation in a number of publications. These are frequently referred to as "shapes" (OECD Oslo Manuals. Guidelines for Collecting and Interpreting Innovation Data,, 2005).

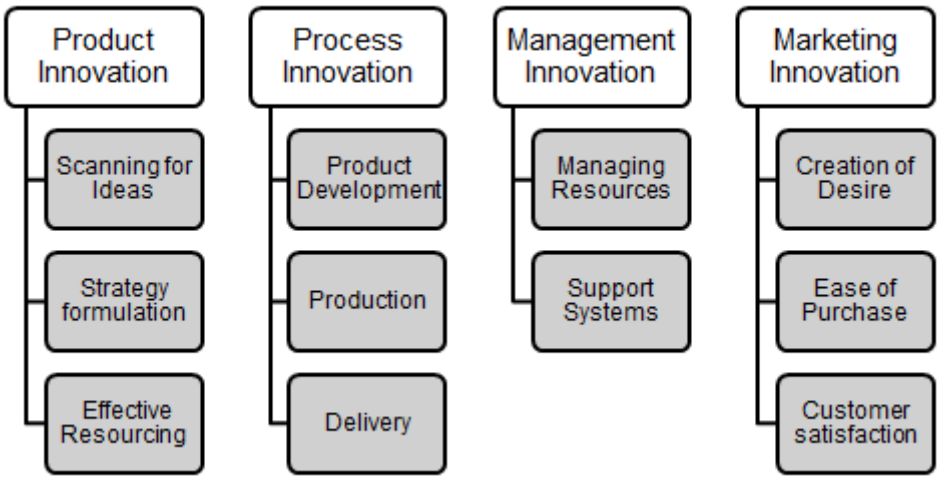
Figure 4. Types of innovation by Higgins and Mensch



Source: *https://slideplayer.com/slide/7242326/*

Each types of innovations have their sub categories and investigated by Higgins (*Figure 5*) and Mensch (*Figure 6*).

Figure 5. Forms of innovation by Higgins

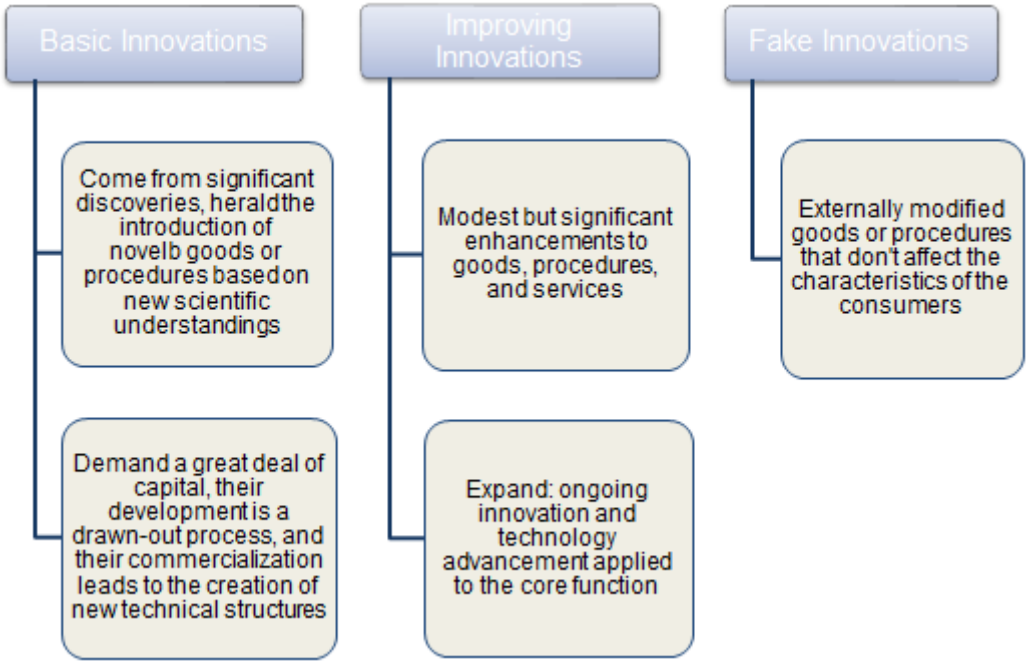


Source: Borut et.el

While the actions listed above are essential, a company that innovates will also prioritize it and have a well-defined method for doing so. The majority of staff members and executives will agree that the protocol is a crucial part of the business's culture (Borut Likar, Urška Mrgole, Peter Fatur, Velizar Petrov, 2013).

The German scientist Mensch presented his significance-based ranking of innovations. He distinguished between three categories of innovation. The model is depicted in *Figure 6* below.

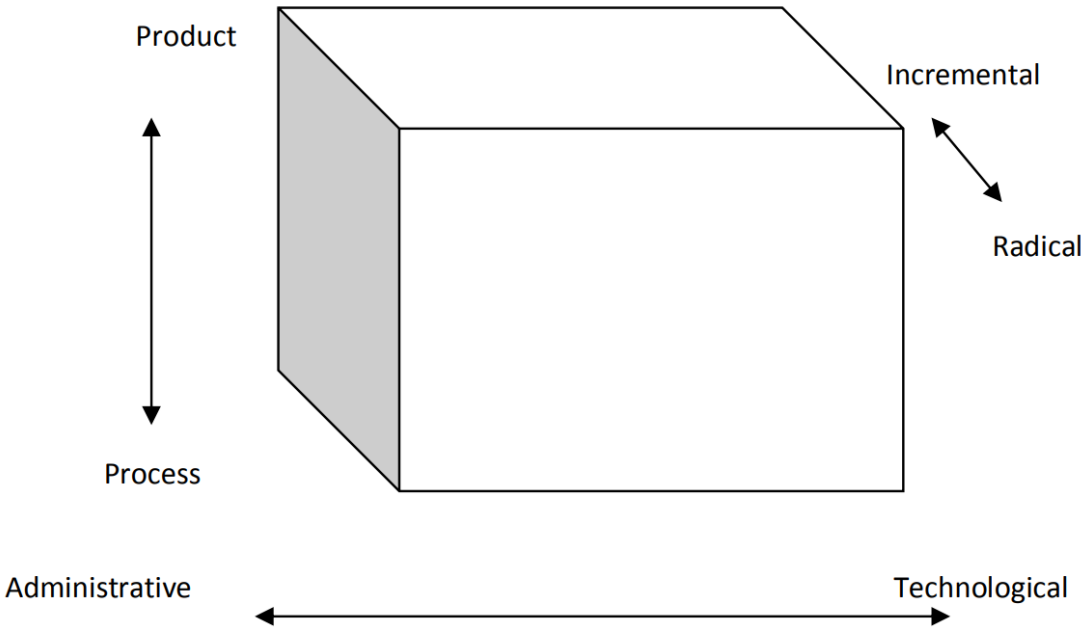
Figure 6. Forms of innovation by Mensch



Source: Siauliai, 2013

Cooper (1998) developed a multidimensional integrative model of innovation that included many forms of innovation: process, product, radical, incremental, and administrative innovation as demonstrated in *Figure 7* (Cooper, 1998).

Figure 7. Multidimensional model of innovation



Source: Adopted by Rowley J., Baregheh A., Smabrock S. 2011 from Cooper, 1998

According to Cooper, each given innovation might have elements of all six categories of innovation. Regarding the function of this model, he says, "A multidimensional model of innovation means that researchers should be more successful in describing relationships between organizational variables and the adoption of innovation by defining innovations more narrowly in terms of the attribute combinations they possess (e.g., process-administration-radical)".

CONCLUSION

The paper examined concepts, definitions, classifications and typology of innovation and conducted an academic literature to identify important models, and frameworks as well as the corresponding definitions of the various kinds of innovation. Numerous writers have given the idea of innovation type a great deal of attention since it is essential to innovation study and practice. A summary diagram of some of the most important models has been put together; by grouping basic illustrations of multiple innovation typologies into a single diagram, some of the challenges involved in establishing a consensus typology or framework for the various types of innovation and their interrelationships can be more easily understood. Classification of innovation is significant because it facilitates the identification of understudied innovation-related topics as well as the simplification of current viewpoints. Since there isn't a single, universal formula that tells individual corporations how to become innovative and how to survive in the contemporary market economy, the innovation classification and sequence of innovation process generations, as demonstrated by this research, can assist innovators in determining their strategy of innovation development based on opportunities and conditions they have.

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